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Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

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July 27, 2017

Kurt Orzolek  
Suddekor, LLC  
82 Deer Park Drive  
East Longmeadow, MA 01028

**RE: East Longmeadow**  
Transmittal No.: X269826  
Application No.: WE-16-022  
Class: *OP*  
FMF No.: 407641  
**AIR QUALITY PLAN APPROVAL**

Dear Mr. Orzolek:

The Massachusetts Department of Environmental Protection (“MassDEP”), Bureau of Air and Waste, has reviewed your Non-major Comprehensive Plan Application (“Application”) listed above. This Application concerns the proposed modification of three-existing paper surface coating lines at your facility located at 82 Deer Park Drive in East Longmeadow, Massachusetts (“Facility”). The Application bears the seal and signature of Suzanne L. Pisano, Massachusetts Registered Professional Engineer Number 42455.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 “Air Pollution Control” regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-O, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP’s review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator (“Permittee”) must comply in order for the Facility to be operated in compliance with this Plan Approval.

**Once the Catalytic Products International, Model: Triton II-60-95, or equivalent, RTO has commenced operation, Plan Approval #1-P-06-037, issued October 25, 2006, is no longer applicable to EU 1, EU2 and EU 6.**

This information is available in alternate format. Contact Michelle Waters-Ekanem, Director of Diversity/Civil Rights at 617-292-5751.

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## **1. DESCRIPTION OF FACILITY AND APPLICATION**

Suddekor, LLC located in East Longmeadow (Facility) manufactures a melamine-formaldehyde (MF) and urea-formaldehyde (UF) resin based decorative paper film, also called a laminate paper product. The laminated paper is then sold to be utilized in the manufacture of décor furniture and flooring. The materials applied in the paper coating operation contain volatile organic compounds (VOCs) and hazardous air pollutants (HAPs).

The Facility commenced operation in September 2005. The Facility was originally issued Plan Approval #1-P-05-001 on April 21, 2005, for the construction and operation of two paper surface coating lines (Emission Unit 1 and 2 below). Subsequently, Plan Approval #1-P-06-037 was issued October 25, 2006, for the modification of the two-existing paper surface coating lines and for the construction and operation of a third paper surface coating line (Emission Unit 6 below). The existing air contaminant sources at the Facility consist of:

- A seven-foot wide VITS Two Stage Impregnation Line, Type IPA/S/II (Emission Unit 1) with a total of nine natural gas-fired ovens in series, each oven has a 1,330,000 Btu per hour burner.
- A seven-foot wide VITS Two Stage Impregnation Line, Type IPA/S/II (Emission Unit 2) with a total of nine natural gas-fired ovens in series, each oven has a 1,330,000 Btu per hour burner.
- A ten-foot wide VITS Two Stage Impregnation Line, Type TECHLINE (Emission Unit 6) with a total of ten natural gas-fired ovens in series, each oven has a 1,390,000 Btu per hour burner.

The MassDEP source registration (SR) identifies the ten-foot wide coating line as Emission Unit (EU) 6 but the Application identifies it as EU 3. However, EU 3 has already been assigned in SR to the facility's "Outdoor HVAC units – Heating and Cooling". To be consistent with SR, MassDEP intends to keep the current identification of the ten-foot wide coating line as EU 6.

Although not specifically mentioned in previous plan approvals, the facility also has mixing, storage and conveying operations for the coatings that are used for each coating line.

The Facility has submitted a Non-major Comprehensive Plan Application in response to MassDEP's letter dated June 30, 2016, and the subsequent MassDEP Administrative Consent Order with Penalty (ACOP) ACOP-WE-7002, issued December 6, 2016. MassDEP's letter and ACOP stated that the Facility was in noncompliance with the VOC and HAP emission limitations contained in Plan Approval #1-P-06-037 (14.0 tons of VOC/HAP in any consecutive 12-month period, 2.0 tons of VOC/HAP in any month and 9.9 tons of any single HAP in any consecutive 12-month period) which was based on the results of the October 2015 stack testing performed on the three existing paper surface coating lines. Using the 2015 stack testing data and actual coating usage, the Facility reported that their 2015 actual emissions from the three

coating lines combined, as shown in Table 7B of the Application, were 57.53 tons of VOCs and 47.28 tons of HAPs.

Based on the actual VOC and HAP emissions from the Facility, it is presently a major source subject to the Title V Operating Permit and Compliance Program pursuant to 310 CMR 7.00: Appendix C(2) since the emissions are equal to or greater than the major source thresholds of 50 tons per year for VOCs, 10 tons per year for a single HAP and 25 tons per year for any combination of HAPs. The Facility does not currently have an operating permit but has submitted an operating permit application.

In the Application, the Facility has proposed to make a physical change to the existing coating operation by installing a regenerative thermal oxidizer (RTO) with 100% capture efficiency to control the VOC and HAP emissions from the three existing paper surface coating lines and to establish new VOC and HAP emission rate limitations for each of the existing coating lines in accordance with the best available control technology requirements of 310 CMR 7.02 (8)(a)2. To achieve 100% capture efficiency, the Facility has proposed to construct a permanent total enclosure (PTE) around each work station of each coating line.

The controlled VOC and HAP concentrations from each paper surface coating line have been proposed to be no greater than 5.0 parts per million by volume dry (ppmvd), measured as methane. In addition, the Facility has calculated that the controlled VOC and HAP emissions from EU 1, EU 2 and EU 6 will be no greater than 1.93 tons in any consecutive 12-month period, 1.76 tons in any consecutive 12-month period and 2.31 tons in any consecutive 12-month period, respectively. The controlled monthly VOC/HAP emission rates for EU 1, EU 2 and EU 6, as calculated by the Facility, will be no greater than 0.24 tons, 0.22 tons and 0.29 tons, respectively.

As described above, the Facility's existing paper surface coating operation includes three paper surface coating lines which can be run independently. Each coating line includes two work stations and each work station is equipped with a drying section. The paper surface coating operation begins by feeding reels of paper substrate through one of the coating lines to the first work station. The work stations are where the coating material is deposited onto the paper. The first work station, which is called the "IPD/ARP" application area, consists of a metering roll coater which applies a continuous layer of various resin formulations at a prescribed thickness and speed. The resin formulations are pumped from holding vessels at the work stations to one or both sets of metering rolls. One metering roll directly coats the top of the paper and the second set directly coats the bottom of the paper. During the coating application, the metering rolls are continuously turning and are adjusted for variable thickness to adjust the amount of coatings applied to the paper. Any excess coatings that are not applied to the paper are removed from the surface of the metering roll using a doctor blade and returned to the respective holding vessels at the work station for reapplication. After the first work station, the paper passes through a drying section. The drying section of EU 1 and EU 2 both consists of four natural gas-fired ovens in series which are each heated with a 1,330,000 Btu per hour burner. EU 6 has four natural gas-fired ovens in series which are each heated with a 1,390,000 Btu per hour burner. The operating

temperatures of the ovens typically range from 225°F to 300°F. The oven burners are exempt from the plan approval requirements of 310 CMR 7.02 pursuant to 310 CMR 7.02(2)(b)15.a.

Following the first drying section, the paper is fed through a second work station called the “Coater” application area. The second work station has two gravure roll coaters which apply a second layer of coating to the paper that consists of a resin formulation which may be the same or different from the first work station. After the second work station, the paper passes through another drying section. The drying section for EU 1 and EU 2 consists of five natural gas-fired ovens in series which are each heated with a 1,330,000 Btu per hour burner. EU 6 has six natural gas-fired ovens in series which are each heated with a 1,390,000 Btu per hour burner. The operating temperatures of the ovens typically range from 225°F to 300°F. The oven burners are exempt from the plan approval requirements of 310 CMR 7.02 pursuant to 310 CMR 7.02(2)(b)15.a. After the paper passes through the drying section, it is cut into various sizes.

The coatings which are applied in each of the work stations consist of MF and UF resin formulations to produce six different product categories that the Facility has identified as Pigmented White, Backer, Décor Furniture, Black, Overlay and Décor Flooring. The Décor Flooring product can only be produced on EU 1 and EU 2, the other product categories can be produced on any of the existing three coating lines. The MF and UF resin formulations, which are a mixture of resins and several additives, contain formaldehyde (VOC/HAP), methanol (VOC/HAP), glycol ethers (VOC/HAP), isopropanol (VOC), 2-ethylhexanol(VOC), monoethanolamine(VOC), diethylene glycol (DEG) and other trace quantities of VOCs. Based on the resin supplier and SDS information, the as-applied resin formulation with the highest VOC and HAP content is for the White product which contains 0.054 pounds of VOC per gallon of coating and 0.050 pounds of HAP per gallon of coating. The maximum VOC and HAP content of the resins is the UF resin with a content of 0.083 pounds per gallon of resin. Additionally, the resin formulations have a maximum of 0.14 pounds of VOC per gallon of solids.

The resins (MF and UF) and bulk DEG are delivered to the facility in tanker trucks. The resins and DEG are transferred from the trucks into a silo and/or holding tanks through a closed piping system. Additives are delivered to the facility in 275 gallon totes. From the silo, holding tanks and additive totes, the chemical mixing system pumps and weighs the precise amounts of resin, DEG and additives through closed lines into a mixing tank to make the as-applied coating formulation. The mixing tank is equipped with a cover/lid that is kept closed when it contains resins and/or additives. Once the coating formulation is complete, the coating is transferred from the mixing tank through closed lines to one of six storage tanks. When coating is needed, it is pumped from the storage tanks through closed lines to any of the following areas: an open vat at the first work station (which will be within the PTE), an enclosed funnel at the first work station and an enclosed funnel at the second work station.

In addition, there are no VOC or HAP-containing cleanup solvents used on the paper surface coating lines.

The exhaust gases from EU 1, 2 and 6 will be vented through a combined stack which will have a diameter no greater than 5.08 feet and a stack height above the ground of no less than 90 feet. During operation the stack gas exit velocity will be no less than 67 feet per second.

### **Applicable Regulatory Requirements**

#### **Best Available Control Technology – 310 CMR 7.02(8)(a)2.**

EU 1, EU 2 and EU 6 are subject to the best available control technology (BACT) requirements of 310 CMR 7.02(8)(a)2. In lieu of an emission-unit-specific top-down BACT analysis, an applicant may propose an emission control limitation by using one or more of the approaches contained in 310 CMR 7.02(8)(a)2.a. through c. The facility has chosen to comply with 310 CMR 7.02(8)(a)2.a. by meeting the minimum control efficiency and control technology requirements specified in the MassDEP Top Case BACT Guidelines for VOC Coating Sources which are a 100% capture efficiency and a 99% destruction efficiency.

The Facility has proposed that the VOC and HAP emissions emitted from the application of coatings on EU1, EU 2 and EU 6 will be captured at 100% by using a PTE (as detailed in EPA Method 204), which will be constructed around each work station of each coating line. Each PTE will extend up to the entry point of the oven associated with the respective coating application station. The differential pressure of each PTE will be continuously monitored and recorded daily using instrumentation. The differential pressure monitoring system of each PTE will be equipped with an audible and visible alarm which activates when the differential pressure exceeds the applicable limit/range.

The captured emissions from each PTE will be controlled by a Catalytic Products International, Model: Triton II-60-95, RTO with a puff chamber. The RTO will have a high thermal energy recovery which is effective for use in applications which have high exhaust stream flow rates and low VOC/HAP concentrations. The coating operation will meet this criteria since the combined exhaust flow rate to the RTO from all three coating lines will be 53,000 dry standard cubic feet per minute (dscfm). In addition, the potential VOC and HAP inlet concentration to the RTO from the coating lines will range from 15.38 to 69.2 parts per million by volume dry basis (ppmvd) for VOCs and 15.24 to 69.12 ppmvd for HAPs based on the October 2015 stack testing data as shown in Table 9 of the Application.

Based on the coating operations high exhaust flow rates combined with low concentrations of VOCs/HAPs, it will be difficult for the RTO to achieve a destruction efficiency of greater than or equal to 99 percent as specified in the “MassDEP Top Case BACT Guidelines for VOC Coating Sources”. For this reason the RTO manufacturer has guaranteed at least 99 percent destruction of total VOC/HAPs or a total VOC/HAP concentration of no more than 5 ppmvd, measured as methane, whichever results in a greater concentration. Based on the Facility’s inlet total VOC/HAP concentrations, the total VOC/HAP concentration of 5 ppmvd will always be greater than the resultant total VOC/HAP concentration based on 99% destruction efficiency. Therefore, the Facility has proposed to comply with a total VOC/HAP emission limit of 5ppmvd, measured as methane.

The RTO will have a maximum capacity of 60,000 dscfm and will be equipped with two natural gas-fired Maxon Kinemax Nozzle mix burners with a maximum heat input of 6 million Btu per hour each. The burners are exempt from the plan approval requirements pursuant to 310 CMR 7.02(2)(b)15. All three coating lines, including the additional flow for natural gas combustion with air, will have a maximum air flow of 54,600 dscfm under maximum load which is less than the maximum design capacity (60,000 dscfm) of the RTO. Therefore, the RTO will be more than capable of controlling all three coating lines simultaneously.

The RTO will have two separate chambers that are packed with ceramic media and a combustion chamber that is located between the two chambers. During operation of the coating lines, the chambers are heated to a minimum temperature of 1600°F by the combustion of natural gas. The flue gas from any or all of the coating lines will enter one of the ceramic media chambers where the hot ceramic media will increase the temperature of the flue gas. After the flue gas has passed through the ceramic media, the heated gas enters the combustion chamber of the RTO where the flue gas temperature will be further increased and the VOCs and HAPs will be destroyed. The heated flue gas then flows through a second chamber of ceramic media. The ceramic media will be heated by the flue gas before leaving the RTO at a reduced temperature. After approximately 3 minutes, the poppet valves (2 per chamber) at the bottom of the RTO will reverse the flue gas flow direction so inlet gas passes through a freshly heated ceramic bed and the exhaust gas will be passed through a cooled bed. Changing the direction of the flue gas flow through the RTO every few minutes helps to maintain an even distribution of heat in the ceramic media on both sides of the RTO while maintaining a high thermal efficiency.

During the shifting of the poppet valves there will be a brief period when the flue gas bypasses the RTO combustion chamber which is called a “puff”. To treat the puff, the RTO will be equipped with a puff capture chamber. The chamber will capture the puff and recirculate it through the RTO combustion chamber once the poppet valves finish shifting. The puff chamber will allow the RTO to achieve the highest possible VOC and HAP destruction efficiency by capturing and treating all of the flue gas from the coating lines.

The minimum operating temperature of the RTO, as measured at the downstream end of the combustion chamber, will be 1600°F (or a lower temperature as established during stack testing) during any time the coating lines are in operation. At this operating temperature, the minimum residence time will be 0.83 seconds. An Allen Bradley Control Logix PLC mechanism will monitor and control all systems including the combustion chamber temperature. The combustion chamber temperature will be continuously monitored and recorded. To ensure that the RTO will be operated as required when the coating lines are in operation, the RTO will be equipped with an interlock that will prevent the operation of any of the coating lines when the combustion chamber temperature of the RTO is less than the minimum operating temperature. In addition, the RTO combustion chamber temperature monitoring system will be equipped with an audible and visible alarm which activates when the combustion chamber temperature is less than the minimum operating temperature at any time a coating line is in operation.

Based on the above, MassDEP considers the use of a PTE with 100% capture for each work station of each coating line in conjunction with a RTO that will control VOC and HAP emissions to a concentration of no greater than 5 ppmvd, expressed as methane, to satisfy the MassDEP Top Case BACT Guidelines for VOC Coating Sources and will be included as BACT for EU 1, EU 2 and EU 6.

For compliance demonstration purposes, MassDEP will require stack testing to determine the total volatile organic compound and organic hazardous air pollutant destruction efficiency (as required by 40 CFR 63.3370(e)(3)(ii)(A)) and emission rate (in ppmvd and pounds per hour), the formaldehyde emission rate (in ppmvd and pounds per hour), the methanol emission rate (in ppmvd and pounds per hour) and the diethylene glycol emission rate (in ppmvd and pounds per hour) of the controlled coating lines under two operating scenarios. The first operating scenario will test the RTO's performance under the lowest VOC/HAP inlet concentration while operating only one coating line. The second operating scenario will test the RTO's performance under a maximum VOC/HAP load with all three coating lines operating simultaneously. For the first operating scenario, the overlay product will be produced on EU 2 since it had the lowest VOC/HAP emission concentration during the October 2015 test and EU 2 has the lowest exhaust volume flow rate. For the second operating scenario the Facility will produce the Backer product simultaneously on EU 1, 2 and 6, since this product had the highest VOC/HAP emission concentration during the October 2015 test and can potentially be simultaneously produced on EU 1, 2 and 6. Alternative operating scenarios may be considered by MassDEP as proposed in the stack emission pretest protocol. In addition, a demonstration will be made to determine if each emission capture enclosure incorporated in EU 1, 2 and 6 qualifies as a permanent total enclosure (also required by 40 CFR 63.3370(e)(3)(i)), as that term is defined by the U.S. Environmental Protection Agency.

Based on the proposed VOC and HAP maximum concentration of 5 ppmvd, EU 1, EU 2 and EU 6 will each not exceed 1.93 tons per year of VOCs/HAPs, 1.76 tons per year of VOCs/HAPs and 2.31 tons per year of VOCs/HAPs, respectively. The annual VOC and HAP emission rate limitations for EU 1, EU 2 and 6 were conservatively calculated by the Facility, as shown in Table 14 of the Application, using the applicable maximum RTO and coating line exhaust flow rate, a worst case assumption that all of the 5ppmvd is methanol (VOC and HAP) and a maximum of 8760 hours of operation per year. For most of the Facility's coatings, the primary component of the VOC and HAP content is formaldehyde followed by methanol. However, if all of the 5 ppmvd is assumed to be formaldehyde, this results in a lower emission rate when compared to the emission rate calculated by assuming all the VOCs and HAPs are methanol. Methanol has a higher molecular weight than formaldehyde which results in the greater emission rates. Therefore, the worst case annual emission rates for EU 1, 2 and 6 are determined by assuming that the VOC and HAP concentration of 5 ppmvd is all methanol.

The monthly VOC/HAP emission rates for EU 1, EU 2 and EU 6 were calculated by the Facility to be no greater than 0.24 tons, 0.22 tons and 0.29 tons, respectively. The Facility determined the monthly emission rates for each coating line by dividing the annual emission rate by 8.

The annual and monthly emission rates for EU 1, EU 2 and EU 6 will be included as BACT.

The Facility will use best management practices (BMPs) to minimize the evaporation of VOCs and HAPs from the storage, mixing and conveying of coatings by using closed lines for conveying materials and closed tanks for the mixing and storage of materials. In addition, there are no VOC or HAP-containing cleanup solvents used on the paper surface coating lines.

The above described BMPs for the storage, mixing, and conveying of coatings will be included as BACT for EU 1, EU 2 and EU 6.

#### Other Regulatory Requirements – 310 CMR 7.00.

In addition to being subject to the BACT requirements of 310 CMR 7.02(8)(a)2., EU 1, 2 and 6 are subject to the visible emission requirements of 310 CMR 7.06, the dust, odor, construction and demolition requirements of 310 CMR 7.09 and the noise reduction requirements of 310 CMR 7.10.

The Facility has indicated that it must comply with the paper surface coating requirements pursuant to 310 CMR 7.18(14). However, 310 CMR 7.18(1)(f) states, in part, that “Any person who, since January 1, 1990, obtains a plan approval for an emission unit under 310 CMR 7.02 where said approval establishes BACT or Lowest Achievable Emission Rate (LAER) to be no less stringent than Reasonably Available Control Technology (RACT) for a facility size and type as defined in 310 CMR 7.18 shall comply with the BACT or LAER established in the plan approval, and is not subject to RACT standards of 310 CMR 7.18 as may otherwise be applicable...” The Application states that the worst case as applied coating has a maximum of 0.14 pounds of VOC per gallon of solids (uncontrolled) which is more stringent than the RACT limitation in 310 CMR 7.18(14)(a) which is not to exceed 4.8 pounds of VOCs per gallon of solids applied. In addition, the facility has proposed, as BACT, that each of the coating lines will be controlled by an RTO with 100% capture efficiency which will be capable of achieving a maximum VOC concentration of 5ppmvd, measured as methane. Therefore, the maximum as applied coating VOC content in addition to the use of an RTO with 100% capture efficiency to control the emissions from EU 1, 2 and 6 will be more stringent than the RACT requirements specified in 310 CMR 7.18(14) and satisfies 310 CMR 7.18(1)(f).

#### New Source Performance Standards (NSPS) and National Emissions Standards for Hazardous Air Pollutants (NESHAPs)

Even though the Application proposes HAP emission rate limitations for EU 1, 2 and 6 to be less than the major source thresholds, EU 1, 2 and 6 are still subject to 40 CFR Part 63; Subpart JJJJ (National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating) because the facility was considered to be a major source of HAPs after the first substantive requirement of 40 CFR Part 63 Subpart JJJJ. The applicable requirements of this subpart have been included in this plan approval except when a MassDEP requirement was considered to be more stringent. The requirements of Subpart JJJJ are discussed in the following paragraphs.



The Facility has chosen to comply with the emission standard in 40 CFR 63.3320(b)(4) of Subpart JJJJ which requires the RTO to achieve an outlet organic HAP concentration of no greater than 20 parts per million by volume (ppmv) by compound on a dry basis and an efficiency of 100 percent for the capture system. The Facility has indicated that EU 1, 2 and 6 will comply with the Subpart JJJJ emission standard since they have proposed to comply with a more stringent BACT standard of 100% capture efficiency and a total VOC and HAP outlet concentration of no greater than 5ppmvd, measured as methane.

For purposes of 40 CFR Part 63 Subpart JJJJ, the work stations for each coating line are considered to be always-controlled work stations as defined in 40 CFR 63.3310.

Subpart JJJJ also requires the RTO and capture system to comply with operating limits specified in 63.3321 and Table 1. The control device operating limit in Subpart JJJJ requires that the average combustion chamber temperature in any 3-hour period shall not fall below the combustion temperature limit established during the initial stack test. However, the RTO manufacturer has stated that the combustion chamber temperature will be a minimum of 1600°F at any time during operation and that the temperature will be continuously monitored and recorded. Therefore, the operating limit for the RTO combustion chamber temperature has already been established, as provided by the RTO manufacturer, and is more stringent than the 3-hour average operating limit specified in 40 CFR 63.3321. In addition, MassDEP will require the continuous recording of the temperature monitoring system which is more stringent than the continuous parameter monitoring system data requirements in 40 CFR 63.3350(e)(1) through (4).

The capture system operating limit in Table 1 of Subpart JJJJ requires the development of a site-specific monitoring plan in accordance with 40 CFR 63.3350(f). This plan must 1) identify the operating parameter to be monitored to ensure the capture efficiency determined during the initial stack test is maintained 2) explain why the parameter is appropriate for demonstrating ongoing compliance, 3) identify the specific monitoring procedures and 4) specify the operating parameter value or range of values that demonstrate compliance with 63.3320(b)(4). Since the proposed BACT emission concentration is more stringent than the emission concentration in 63.3320(b)(4), the operating parameter value, or range of values, will demonstrate compliance with BACT as well as 63.3320(b)(4). The Facility has stated that the differential pressure will be used as the capture system operating parameter and will be continuously monitored by instrumentation. MassDEP will require the daily recording of the differential pressure. The differential pressure value, or range of values, for each PTE will be determined during the initial stack test.

In accordance with 40 CFR 63.3360(a), an initial performance test will be conducted for the control system to determine the removal efficiency of the RTO according to 40 CFR 63.3360(e)(1) and (2) and the capture efficiency of each capture system according to 40 CFR 63.3360(f). 40 CFR 63.3360(e)(3)(i) requires the RTO combustion chamber temperature operating limits to be established during stack testing. However, the RTO combustion chamber temperature operating limit has already been established, as provided by the RTO manufacturer, and does not need to be reestablished.

In accordance with 40 CFR 63.3370(a)(4)(i), EU 1, 2 and 6 will demonstrate compliance with Subpart JJJJ by using a capture system and control device to demonstrate that the oxidizer outlet organic HAP concentration is no greater than 20 ppmv by compound and capture efficiency is 100 percent. To accomplish this, procedures set out in 63.3370(e)(3)(i) and (ii) will be followed to determine compliance with emission requirements in 63.3320(b). 63.3370(e)(3)(i) requires the PTE around each web coating line to be installed and meet 63.3360(f)(1). 63.3370(e)(3)(ii) requires the organic HAP outlet concentration of the control device to be determined as well as the control device efficiency using Equation 2 of 63.3360 and the applicable test methods and procedures specified in 63.3360(e). As previously discussed in the BACT section, MassDEP will require initial stack testing to determine the total volatile organic compound and organic hazardous air pollutant destruction efficiency and emission rate (in ppmvd and pounds per hour), the formaldehyde emission rate (in ppmvd and pounds per hour), the methanol emission rate (in ppmvd and pounds per hour) and the diethylene glycol emission rate (in ppmvd and pounds per hour) of the controlled coating lines under two operating scenarios. In addition, a demonstration will be conducted to determine if each emission capture enclosure incorporated in EU 1, 2 and 6 qualifies as a permanent total enclosure, as that term is defined by the U.S. Environmental Protection Agency. This testing will satisfy the procedures specified in 63.3370(e)(3)(i) and (ii).

The test method specified in 40 CFR 63.3360(e)(1)(vi) requires the use of Method 25 or 25A of 40 CFR Part 60, Appendix A to determine the total gaseous non-methane organic matter concentration at the inlet and outlet of the control device. However, it is known that exhaust streams containing formaldehyde, like the one at this facility, will cause an interference when applying these test methods and provide inaccurate results. Since no alternative test methods are provided in Subpart JJJJ, Suddekor, LLC is advised to submit an alternative test method request to EPA prior to submitting the initial test protocol to MassDEP. A guidance document for submitting alternative test method requests can be found at:

<https://www3.epa.gov/ttn/emc/guidlnd/gd-022.pdf>

The Facility will comply with the notification and reporting requirements specified in 40 CFR 63.3400(b) through (g) as well as the monthly recordkeeping requirements specified in 40 CFR 63.3410(a)(1)(ii) and (v). The facility has already submitted the initial notification as required by 40 CFR 63.3400(b) so this requirement will not be included in this plan approval. The Permittee will be required to maintain records on a continuous basis for the combustion chamber temperature of the RTO as well as daily records of the differential pressures for each PTE for EU #1, #2 and #6. Therefore, these recordkeeping requirements are more stringent than the monthly records required in 40 CFR 63.3410(a)(1)(ii).

There are no New Source Performance Standards (40 CFR Part 60) which apply to this source.

#### Operating Permit and Compliance Program pursuant to 310 CMR 7.00: Appendix C

Since the facility is still considered a major source of HAP emissions under the National Emission Standards for Hazardous Air Pollutants (NESHAPs) and the USEPA's "once in always in" policy, the facility is subject to the Operating Permit and Compliance Program pursuant to

310 CMR 7.00: Appendix C(2). Since an initial operating permit application has been previously submitted for the facility, the facility must submit to MassDEP a revised BWP AQ14 Air Quality Initial Operating Permit application within 90 days of this Final Approval reflecting the requirements of this Final Approval.

### **Ambient Air Quality Impact Analysis**

MassDEP has reviewed the air quality dispersion modeling report that was included as part of Application WE-16-022. The AERMOD air quality dispersion modeling report demonstrates that the combined impacts from the paper surface coating lines, when operated in accordance with this Plan Approval, will not cause an exceedance of the current annual Allowable Ambient Limit (AAL) and the 24-hour Threshold Effects Exposure Limit (TEL) guideline values for formaldehyde and methanol.

### **Type of Model**

The air quality modeling analysis was performed with the latest version (16216) of the USEPA AERMOD with USEPA's recommended regulatory default options and rural dispersion coefficients. AERMOD was set up to predict 24-hour and annual average concentrations of formaldehyde and methanol in units of  $\mu\text{g}/\text{m}^3$ .

### **Meteorological Data**

AERMOD uses AERMET (Version 15181) to process the raw meteorological data to generate the input files required for AERMOD. The air quality modeling analysis used five years (2011-2015) of hourly surface meteorological data from Bradley International Airport, Windsor Locks, Connecticut along with 5 years of concurrent upper air meteorological data from Albany International Airport, NY. This data was considered to be the most representative for the facility's dispersion environment. One-minute Automated Surface Observing System (ASOS) data processing was utilized with AERMINUTE (Version 14237 or a later version) to reduce the number of calm wind hours. AERSURFACE (Version 13106 or a later version) was used to determine the surface characteristics and roughness length of the area. AERSURFACE was also used to determine the Bowen ratio and albedo.

### **Selected Air Quality Monitors**

Background air quality concentrations of formaldehyde, methanol or other compounds were not added to model-predicted concentrations because no monitoring data was available to use in the analysis. This is acceptable practice for this type of air toxic modeling analysis.

### **Receptor Network**

A nested Cartesian coordinate (i.e., rectangular) receptor grid was used with receptor spacing of 20 meters along the fence line and to a distance of 50 meters from the property line, 50 meters to a distance of approximately 200 meters from the fence line, 100 meters to a distance of approximately 1,000 meters from the fence line and 200 meters to a distance of approximately 3,000 meters from the fence line. A total of 2,200 receptors were employed. The spacing and horizontal extent of this receptor array was more than adequate for this modeling analysis.

Elevations for each receptor were estimated using the AERMAP program and terrain data downloaded from the United States Geological Survey website.

### **Air Dispersion Modeling Results**

Table 5 of the modeling report shows that the formaldehyde and methanol modeling results comply with the applicable MassDEP TEL/AALs. The modeling results represent the combined impact from all three coating lines with a controlled maximum outlet concentration of 5 parts per million of VOCs/HAPs. The concentration of 5ppm was conservatively used for both formaldehyde and methanol for modeling purposes. The modeling results are provided in the table below.

<b>Averaging Period</b>	<b>Pollutant</b>	<b>Facility Impact (ug/m<sup>3</sup>)</b>	<b>TEL/AAL Guideline (ug/m<sup>3</sup>)</b>	<b>Percent of TEL/AAL</b>
24-hour (TEL)	Formaldehyde	1.26	2.0	63%
Annual (AAL)*		0.075	0.080	94%
Annual (AAL)**		0.060	0.080	75%
24-hour (TEL)	Methanol	1.35	7.0	19%
Annual (AAL)		0.064	7.0	1%

\* Based on year 2015 from initial modeling

\*\* Based on average over 5 years from final modeling

Therefore, the coating lines (with controls), as approved, will neither cause nor contribute to a condition of air pollution with respect to formaldehyde and methanol emissions.

## 2. EMISSION UNIT IDENTIFICATION

Each Emission Unit (“EU”) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>EU</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
1	VITS Two Stage Impregnation Line-Type IPA/S/II which incorporates two paper surface coating application stations each equipped with a permanent total enclosure and associated coating storage and mixing tanks	75 meters of paper per minute	Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer
2	VITS Two Stage Impregnation Line-Type IPA/S/II which incorporates two paper surface coating application stations each equipped with a permanent total enclosure and associated coating storage and mixing tanks	75 meters of paper per minute	
6	VITS Two Stage Impregnation Line- Type TECHLINE which incorporates two paper surface coating application stations each equipped with a permanent total enclosure and associated coating storage and mixing tanks	90 meters of paper per minute	

**Table 1 Key:**

EU = Emission Unit Number

PCD = Pollution Control Device

### 3. APPLICABLE REQUIREMENTS

#### A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2:

Table 2a			
EU	Operational / Production Limit	Air Contaminant	Emission Limit
1	1. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, no VOC or HAP-containing cleanup solvents shall be used.	VOC and HAP	Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the VOC and organic HAP concentration in the exhaust of the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer shall not exceed 5 parts per million dry volume, expressed as methane.
	2. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the VOC content of the coatings shall not exceed 0.14 pounds per gallon of solids, as applied.	VOC	≤0.24 tons per month and ≤1.93 tons in any consecutive 12-month period
		HAP	≤0.24 tons per month and ≤1.93 tons in any consecutive 12-month period
2	3. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, , no VOC or HAP-containing cleanup solvents shall be used.	VOC and HAP	Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the VOC and organic HAP concentration in the exhaust of the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer shall not exceed 5 parts per million dry volume, expressed as methane.
	4. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the VOC content of the coatings shall not exceed 0.14 pounds per gallon of solids, as applied.	VOC	≤0.22 tons per month and ≤1.76 tons in any consecutive 12-month period
		HAP	≤0.22 tons per month and ≤1.76 tons in any consecutive 12-month period

**Table 2b**

EU	Operational / Production Limit	Air Contaminant	Emission Limit
6	5. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, , no VOC or HAP-containing cleanup solvents shall be used.	VOC and HAP	Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the VOC and organic HAP concentration in the exhaust of the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer shall not exceed 5 parts per million dry volume, expressed as methane.
	6. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the VOC content of the coatings shall not exceed 0.14 pounds per gallon of solids, as applied.	VOC	≤0.29 tons per month and ≤2.31tons in any consecutive 12-month period
		HAP	≤0.29 tons per month and ≤2.31 tons in any consecutive 12-month period

**Table 2a/2b Key:**

EU = Emission Unit Number  
 HAP = Hazardous Air Pollutants  
 VOC = Volatile Organic Compounds

**B. COMPLIANCE DEMONSTRATION**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3a/b, 4a/b/c, and 5a/b:

<b>Table 3a</b>	
<b>EU</b>	<b>Monitoring and Testing Requirements</b>
1 2 6	1. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2. and 40 CFR 63.3350(e), the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer shall be equipped with instrumentation to monitor the combustion chamber temperature on a continuous basis.
	2. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2. and 40 CFR 63.3350(e), each PTE shall be equipped with instrumentation to monitor the differential pressure on a continuous basis.
	3. The differential pressure monitoring system of each PTE shall be equipped with an audible and visible alarm which activates when the differential pressure exceeds the limit/range established in the site-specific monitoring plan.
	4. The RTO combustion chamber temperature monitoring system shall be equipped with an audible and visible alarm which activates when the combustion chamber temperature is less than the minimum operating temperature at any time the emission unit is in operation.
	5. Pursuant to 40 CFR 63.3350(e)(6), at all times, the Permittee shall maintain the temperature monitoring system and differential pressure monitoring system of each PTE in proper working order including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.
	6. Pursuant to 40 CFR 63.3350(e)(7), except for monitoring malfunctions, associated repairs, or required quality assurance or control activities, the Permittee shall conduct all monitoring of the RTO combustion chamber temperature and differential pressure for each PTE at all times that the emission unit is in operation. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
	7. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2 and 40 CFR 63.3350(e)(9)(i), the Permittee shall install, calibrate, maintain, and operate temperature monitoring equipment according to the manufacturer's specifications. The calibration of the chart recorder, data logger, or temperature indicator must be verified every 3 months or the chart recorder, data logger, or temperature indicator must be replaced. You must replace the equipment whether you choose not to perform the calibration or the equipment cannot be calibrated properly.
	8. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, and 40 CFR 63.3350(e)(9)(ii), the Permittee install, calibrate, operate, and maintain a temperature monitoring device equipped with a continuous recorder. The device must have an accuracy of $\pm 1$ percent of the temperature being monitored in degrees Celsius, or $\pm 1$ °Celsius, whichever is greater. The thermocouple or temperature sensor must be installed in the combustion chamber at a location in the combustion zone.



**Table 3b**

EU	Monitoring and Testing Requirements
1 2 6	<p>9. Pursuant to 40 CFR 63.3350(f), the Permittee shall develop a site-specific monitoring plan containing the information specified in paragraphs (f)(1) and (2) of 40 CFR 63.3350 for each capture system, also known as a permanent total enclosure. The Permittee shall monitor the capture system in accordance with paragraph (f)(3) of 40 CFR 63.3350. The Permittee shall make the monitoring plan available for inspection by the permitting authority upon request.</p>
	<p>10. Pursuant to 40 CFR 63.3350(f)(3), the Permittee shall conduct all capture system monitoring in accordance with the monitoring plan.</p>
	<p>11. Pursuant to 40 CFR 63.3350(f)(4), any deviation from the differential pressure value or range of values which are monitored according to the monitoring plan shall be considered a deviation from the operating limit.</p>
	<p>12. Pursuant to 40 CFR 63.3350(f)(5), the Permittee shall review and update the capture system monitoring plan at least annually.</p>
	<p>13. Within 90 days from the date of startup of the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer, stack testing shall be performed in accordance with procedures set forth in Appendix A of 40 CFR Part 60 or another method approved by the Department and EPA to determine the total volatile organic compound and organic hazardous air pollutant destruction efficiency [as required in 40 CFR 63.3370(e)(3)(ii)] and emission rate (in parts per million dry volume and pounds per hour), the formaldehyde emission rate (in parts per million dry volume and pounds per hour), the methanol emission rate (in parts per million dry volume and pounds per hour) and the diethylene glycol emission rate (in parts per million dry volume and pounds per hour) while operating the combustion chamber of the RTO as close to 1600°F as can reasonably be achieved (but not less than 1600°F).<sup>*</sup> The total volatile organic compound and organic hazardous air pollutant destruction efficiency shall be conducted such that the RTO inlet and outlet testing is conducted simultaneously. The stack testing shall be conducted during the following operating scenarios:</p> <ul style="list-style-type: none"> <li>a. Producing only the “overlay” product on EU 2.</li> <li>b. Producing the “Backer” product simultaneously on EU 1, 2 and 6 respectively.</li> </ul> <p>Alternative operating scenarios which are representative of the minimum and maximum VOC/HAP inlet concentration may be considered by MassDEP as proposed in the stack emission pretest protocol.</p> <p>Additionally, a demonstration shall be made that each emission capture enclosure incorporated in EU 1, 2 and 6 qualifies as a permanent total enclosure, as that term is defined by the U.S. Environmental Protection Agency.</p> <p><sup>*</sup>The minimum combustion chamber temperature requirement for the RTO may be waived during compliance testing if the Permittee intends to establish a new minimum combustion chamber temperature as proposed in the stack emission pretest protocol.</p>
	<p>14. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.</p>
	<p>15. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13.</p>

**Table 3a/3b Key:**

EU = Emission Unit Number

PTE = Permanent Total Enclosure

RTO = Regenerative Thermal Oxidizer

USEPA = United States Environmental Protection  
 Agency

<b>Table 4a</b>	
<b>EU</b>	<b>Recordkeeping Requirements</b>
1 2 6	<ol style="list-style-type: none"> <li>The Permittee shall maintain comprehensive and accurate daily records for each EU which shall include, but are not limited to:               <ol style="list-style-type: none"> <li>Identity, quantity, formulation and density of coating(s) used;</li> <li>Identity, quantity, formulation and density of any diluent(s) and clean-up solvents(s) used;</li> <li>solids content of any coating(s) used;</li> <li>Actual operational and emissions characteristics of the coating line and any appurtenant emissions capture and control equipment;</li> <li>Quantity of product processed; and</li> <li>Hours of operation</li> </ol> </li> <li>Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2. and 40 CFR 63.3350(e), the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer shall be equipped with instrumentation to record the combustion chamber temperature at the downstream end of the combustion chamber on a continuous basis.</li> <li>The Permittee shall maintain comprehensive and accurate records on a continuous basis of the combustion chamber temperature of the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer.</li> <li>Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2. each PTE for EU 1, 2 and 6 shall be equipped with instrumentation to record the differential pressure on a daily basis.</li> <li>The Permittee shall maintain comprehensive and accurate records on a daily basis of the differential pressure for each PTE for EU 1, 2 and 6 and record whether or not each PTE is achieving 100% capture efficiency for each PTE.</li> <li>The Permittee shall maintain records of the date and time of each differential pressure alarm, the cause of the alarm and the associated corrective action.</li> <li>The Permittee shall keep a log documenting any instance when the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer combustion chamber temperature drops below 1600°F during the operation of EU 1, 2 or 6. The log shall include the time of the low temperature, cause of the low temperature, and the time when the oxidizer resumed normal operation.</li> <li>Pursuant to 40 CFR 63.3350(e)(5), the Permittee shall record the results of each inspection, calibration, and validation check of the temperature monitoring system and the differential pressure monitoring system of each PTE.</li> <li>Pursuant to 40 CFR 63.3410(a)(1)(v), the Permittee shall maintain monthly records specified in 63.10(b)(2) of all measurements needed to demonstrate compliance with 40 CFR Part 63 Subpart JJJJ including the overall control efficiency determination using capture efficiency and control device destruction or removal efficiency test results in accordance with the requirements of 63.3360(e) and (f).</li> </ol>

**Table 4b**

EU	Recordkeeping Requirements
1 2 6	<p>10. Pursuant to 40 CFR 63.6(e)(3)(iii), when actions taken by the Permittee during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction (including actions taken to correct a malfunction) are consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, the Permittee shall keep records for that event which demonstrate that the procedures specified in the plan were followed. These records may take the form of a "checklist," or other effective form of recordkeeping that confirms conformance with the startup, shutdown, and malfunction plan and describes the actions taken for that event. In addition, the Permittee shall keep records of these events as specified in 40 CFR 63.10(b), including records of the occurrence and duration of each startup or shutdown (if the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction of operation and each malfunction of the air pollution control and monitoring equipment. Furthermore, the owner or operator shall confirm that actions taken during the relevant reporting period during periods of startup, shutdown, and malfunction were consistent with the affected source's startup, shutdown and malfunction plan in the semiannual (or more frequent) startup, shutdown, and malfunction report required in 40 CFR 63.10(d)(5).</p> <p>11. Pursuant to 40 CFR 63.6(e)(3)(iv), if an action taken by the Permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then the Permittee shall record the actions taken for that event.</p> <p>12. Pursuant to 40 CFR 63.10(b), the Permittee shall comply with the general recordkeeping requirements specified in 40 CFR 63.10(b)(1) and (2)(i) through (v).</p>
Facility-wide	<p>13. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2a/2b above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15<sup>th</sup> day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at <a href="http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping">http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping</a>.</p> <p>14. The Permittee shall maintain records of monitoring and testing as required by Table 3.</p> <p>15. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) and PCD(s) approved herein on-site.</p> <p>16. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.</p> <p>17. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s), PCD(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.</p>

<b>Table 4c</b>	
<b>EU</b>	<b>Recordkeeping Requirements</b>
Facility-wide	18. The Permittee shall maintain records to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	19. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	20. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

**Table 4a/4b/4c Key:**

EU = Emission Unit Number

SOMP = Standard Operating and Maintenance  
 Procedure

PCD = Pollution Control Device

USEPA = United States Environmental Protection  
 Agency

<b>Table 5a</b>	
<b>EU</b>	<b>Reporting Requirements</b>
1 2 6	1. The Permittee shall notify MassDEP , Western Region, in writing, the date on which the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer commences operation at the facility. This notice shall be provided to MassDEP within (5) days of commencing operation.
	2. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30 days from MassDEP's request.
	3. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3b Monitoring and Testing Requirements. The protocol shall contain a description of the proposed test methods and dimensioned drawings or sketches showing the proposed test port locations as well as a description of the proposed method for determining that each of the emission capture enclosures incorporated in the paper surface coating line qualify as permanent total enclosures. The protocol shall also identify all process data and operating parameters for the regenerative thermal oxidizer and capture enclosures which will be monitored and recorded during the testing.
	4. The Permittee shall submit to MassDEP a notification of the anticipated test date a minimum of 30 days prior to conducting the stack emission test as required by Table 3b Monitoring and Testing Requirements herein. MassDEP is under no obligation to accept the results of any testing performed without proper notification having been given.
	5. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3a/3b Monitoring and Testing Requirements. The report shall contain the results of the tests, a description of the testing and analytical procedures actually used in the performance of the tests, all process data and regenerative thermal oxidizer operating data collected during the tests, a copy of all raw data, and a copy of all calculations generated during data analysis.

<b>Table 5b</b>	
<b>EU</b>	<b>Reporting Requirements</b>
1 2 6	<p>6. Pursuant to 40 CFR 63.6(e)(3)(iv), if an action taken by the Permittee during a startup, shutdown, or malfunction (including an action taken to correct a malfunction) is not consistent with the procedures specified in the affected source's startup, shutdown, and malfunction plan, and the source exceeds any applicable emission limitation in the relevant emission standard, then the Permittee shall report such actions within 2 working days after commencing actions inconsistent with the plan, followed by a letter within 7 working days after the end of the event, in accordance with 40 CFR 63.10(d)(5) (unless the Permittee makes alternative reporting arrangements, in advance, with the MassDEP or the USEPA).</p> <p>7. Pursuant to 40 CFR 63.10(d)(5)(i), if actions taken by the Permittee during a startup or shutdown (and the startup or shutdown causes the source to exceed any applicable emission limitation in the relevant emission standards), or malfunction of an affected source (including actions taken to correct a malfunction) are consistent with the procedures specified in the source's startup, shutdown, and malfunction plan (see §63.6(e)(3)), the Permittee shall state such information in a startup, shutdown, and malfunction report. Actions taken to minimize emissions during such startups, shutdowns, and malfunctions shall be summarized in the report and may be done in checklist form; if actions taken are the same for each event, only one checklist is necessary. Such a report shall also include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. Reports shall only be required if a startup or shutdown caused the source to exceed any applicable emission limitation in the relevant emission standards, or if a malfunction occurred during the reporting period. The startup, shutdown, and malfunction report shall consist of a letter, containing the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, that shall be submitted to the MassDEP and the USEPA semiannually (or on a more frequent basis if specified otherwise in a relevant standard or as established otherwise by the permitting authority in the source's title V permit). The startup, shutdown, and malfunction report shall be delivered or postmarked by the 30th day following the end of each calendar half (or other calendar reporting period, as appropriate).</p>
Facility-wide	<p>8. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).</p> <p>9. The Permittee shall notify the Western Regional Office of MassDEP, BAW Compliance and Enforcement Chief by telephone: 413-755-2131, email: saadi.motamedi@massmail.state.ma.us or fax: 413-784-1149, as soon as possible, but no later than three (3) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted Permit Chief at MassDEP within ten (10) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).</p> <p>10. The Permittee shall report annually to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.</p>

**Table 5a/5b Key:**

EU = Emission Unit Number

USEPA = United States Environmental Protection Agency

#### 4. **SPECIAL TERMS AND CONDITIONS**

- A. The Permittee is subject to, and shall comply with, the Special Terms and Conditions as contained in Table 6a/b/c/d below:

<b>Table 6a</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
1 2 6	1. EU 1, EU 2 and EU 6 are subject to the National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating, 40 CFR Part 63.3280 through 63.3420 and shall comply with all applicable requirements.
	2. EU 1, EU 2 and EU 6 shall consist of the equipment specified in Table 1 herein.
	3. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, EU 1, EU 2 and EU 6 shall only be used to apply coatings to paper substrates.
	4. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer shall be equipped with a puff capture chamber.
	5. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2 and 40 CFR 63.3321(a) , upon each occurrence of operation of EU 1,2 or 6, the combustion chamber of the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer shall achieve a temperature of at least 1600°F prior to the commencement of coating and the combustion chamber temperature shall thereafter be maintained at a minimum of 1600°F at all times.  Based on the combustion chamber temperatures recorded during a stack test which demonstrates compliance with the emission limitations contain in Table 2a/2b herein, the Permittee may request a change to the minimum combustion chamber temperature requirement.
	6. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the Permittee shall ensure a minimum 0.83 second residence time in the combustion chamber of the Catalytic Products International, Triton II-60-95, or equivalent, Regenerative Thermal Oxidizer.
	7. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, each paper coating application station of EU 1, EU 2 and EU 6 shall be equipped with a permanent total enclosure, as defined by the U.S. Environmental Protection Agency's Test Method 204. Each permanent total enclosure shall extend up to the entry point of the oven associated with the respective coating application station.
	8. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, each permanent total enclosure shall capture 100% of the VOCs and volatile HAPs emitted from the application and curing of coatings. 100% of all VOCs and volatile HAPs captured by the enclosures shall be sent to the RTO.
	9. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the coating mixing tanks and storage tanks/vessels associated with EU 1, EU 2 and EU 6 shall be equipped with a lid, or other method approved by MassDEP.

**Table 6b**

EU	Special Terms and Conditions
1 2 6	<p>10. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the lid for each coating mixing tank and storage tanks/vessels associated with EU 1, EU 2 and EU 6 shall:</p> <ul style="list-style-type: none"> <li>a. extend at least 0.5 inch beyond the outer rim of the tank or be attached to the rim of the tank; and,</li> <li>b. be maintained so that when in place, the lid maintains contact with the rim of the mixing tank for at least 90% of the rim's circumference; and,</li> <li>c. if necessary, have an opening to allow for insertion of a mixer shaft, which opening shall be covered after insertion of the mixer, except to allow adequate clearance for the mixer shaft.</li> </ul> <p>11. Pursuant to the best available control technology provision of 310 CMR 7.02(8)(a)2, the Permittee shall comply with the following work practices:</p> <ul style="list-style-type: none"> <li>a. Store all VOC and/or HAP-containing coatings, process-related waste materials and VOC and/or HAP-containing materials in closed containers;</li> <li>b. ensure that mixing and storage containers used for VOC and/or HAP-containing coatings, process-related waste materials, and VOC and/or HAP-containing materials are kept closed at all times except when depositing or removing these materials;</li> <li>c. minimize spills of VOC and/or HAP-containing coatings, process-related waste materials, and VOC and/or HAP-containing materials;</li> <li>d. convey VOC and/or HAP-containing coatings, process-related waste materials, and VOC and/or HAP-containing materials from one location to another in closed containers or pipes;</li> <li>e. store and dispose of all absorbent materials, such as cloth or paper, that are contaminated with VOC and/or HAP-containing coatings, process-related waste materials, or VOC and/or HAP-containing materials in non-absorbent containers that shall be kept closed except when placing materials in or removing materials from the container.</li> </ul> <p>12. Pursuant to 40 CFR 63.6(e)(1)(i), at all times, including periods of startup, shutdown, and malfunction, the Permittee shall operate and maintain EU 1, EU 2 and EU 6, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the affected source to the greatest extent which is consistent with safety and good air pollution control practices. The general duty to minimize emissions during a period of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the MassDEP and the USEPA which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (e)(3) of 40 CFR 63.6), review of operation and maintenance records, and inspection of the source.</p> <p>13. Pursuant to 40 CFR 63.6(e)(1)(ii), malfunctions must be corrected as soon as practicable after their occurrence. To the extent that an unexpected event arises during a startup, shutdown, or malfunction, the Permittee shall comply by minimizing emissions during such a startup, shutdown, and malfunction event consistent with safety and good air pollution control practices.</p>

**Table 6c**

EU	Special Terms and Conditions
1 2 6	<p>14. Pursuant to 40 CFR 63.6(e)(1)(iii), operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emissions limitations or other requirements in relevant standards.</p>
	<p>15. Pursuant to 40 CFR 63.6(e)(3)(i)(A) through (C), the Permittee shall develop a written startup, shutdown, and malfunction plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; and a program of corrective action for malfunctioning process, air pollution control, and monitoring equipment used to comply with the relevant standard. The startup, shutdown, and malfunction plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. This plan must be developed by the Permittee by the source's compliance date for that relevant standard. The purpose of the startup, shutdown, and malfunction plan is to:</p> <ul style="list-style-type: none"> <li>a. Ensure that, at all times, the owner or operator operates and maintains each affected source, including associated air pollution control and monitoring equipment, in a manner which satisfies the general duty to minimize emissions established by paragraph (e)(1)(i) of this section;</li> <li>b. Ensure that owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and</li> <li>c. Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).</li> </ul>
	<p>16. Pursuant to 40 CFR 63.6(e)(3)(v), the Permittee shall maintain at the affected source a current startup, shutdown, and malfunction plan and must make the plan available upon request for inspection and copying by the MassDEP and the USEPA. In addition, if the startup, shutdown, and malfunction plan is subsequently revised as provided in 40 CFR 63.6 (e)(3)(viii), the Permittee shall maintain at the affected source each previous (i.e., superseded) version of the startup, shutdown, and malfunction plan, and shall make each such previous version available for inspection and copying by the MassDEP and the USEPA for a period of 5 years after revision of the plan. If at any time after adoption of a startup, shutdown, and malfunction plan the affected source ceases operation or is otherwise no longer subject to the provisions of this part, the Permittee must retain a copy of the most recent plan for 5 years from the date the source ceases operation or is no longer subject to this part and must make the plan available upon request for inspection and copying by the MassDEP and the USEPA. The MassDEP and the USEPA may at any time request in writing that the Permittee submit a copy of any startup, shutdown, and malfunction plan (or a portion thereof) which is maintained at the affected source or in the possession of the Permittee. Upon receipt of such a request, the Permittee shall promptly submit a copy of the requested plan (or a portion thereof) to the MassDEP and the USEPA. The Permittee may elect to submit the required copy of any startup, shutdown, and malfunction plan to the MassDEP and the USEPA in an electronic format. If the Permittee claims that any portion of such a startup, shutdown, and malfunction plan is confidential business information entitled to protection from disclosure under section 114(c) of the Act or 40 CFR 2.301, the material which is claimed as confidential must be clearly designated in the submission.</p>



<b>Table 6d</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
1 2 6	17. Pursuant to 40 CFR 63.6(e)(3)(viii), the Permittee may periodically revise the startup, shutdown, and malfunction plan for the affected source as necessary to satisfy the requirements of this part or to reflect changes in equipment or procedures at the affected source. Unless the permitting authority provides otherwise, the owner or operator may make such revisions to the startup, shutdown, and malfunction plan without prior approval by the MassDEP and the USEPA or the permitting authority. However, each such revision to a startup, shutdown, and malfunction plan must be reported in the semiannual report required by 40 CFR 63.10(d)(5). If the startup, shutdown, and malfunction plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction but was not included in the startup, shutdown, and malfunction plan at the time the Permittee developed the plan, the Permittee shall revise the startup, shutdown, and malfunction plan within 45 days after the event to include detailed procedures for operating and maintaining the source during similar malfunction events and a program of corrective action for similar malfunctions of process or air pollution control and monitoring equipment. In the event that the Permittee makes any revision to the startup, shutdown, and malfunction plan which alters the scope of the activities at the source which are deemed to be a startup, shutdown, or malfunction, or otherwise modifies the applicability of any emission limit, work practice requirement, or other requirement in a standard established under this part, the revised plan shall not take effect until after the Permittee has provided a written notice describing the revision to the permitting authority.
Facility-wide	18. The Permittee shall submit to MassDEP within 90 days of this Final Approval a revised BWP AQ14 Air Quality Initial Operating Permit application reflecting the requirements of this Final Approval. The application should also include the specific applicable regulations from 310 CMR 7.00 as well as each applicable requirement contained in the National Emission Standards for Hazardous Air Pollutants such as 40 CFR Part 63 Subpart JJJJ (National Emission Standards for Paper and Other Web Coating), etc. for each source at your facility.

**Table 6a/6b/6c/6d Key:**

EU = Emission Unit Number  
 HAP = Hazardous Air Pollutant  
 RTO – Regenerative Thermal Oxidizer  
 USEPA = United States Environmental Protection Agency  
 VOC = Volatile Organic Compound

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including, but not limited to, rain protection devices known as “shanty caps” and “egg beaters.”
- C. The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7, for the Emission Units that are regulated by this Plan Approval:

<b>Table 7</b>				
<b>EU</b>	<b>Stack Height Above Ground (feet)</b>	<b>Stack Inside Exit Dimensions (feet)</b>	<b>Stack Gas Exit Velocity Range (feet per second)</b>	<b>Stack Gas Exit Temperature Range (°F)</b>
1 2 6 (combined stack)	90	5.08	~67	~290

**Table 7 Key:**

EU = Emission Unit Number

°F = Degree Fahrenheit

## **5. GENERAL CONDITIONS**

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain “Fail-Safe Provisions,” which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

## **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Cortney Danneker by telephone at 413-755-2234, or in writing at the letterhead address.

*This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.*

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Marc Simpson  
Air Quality Permit Chief  
Bureau of Air and Waste

ecc: MassDEP/Boston - Yi Tian  
MassDEP/WERO – Peter Czapienski

